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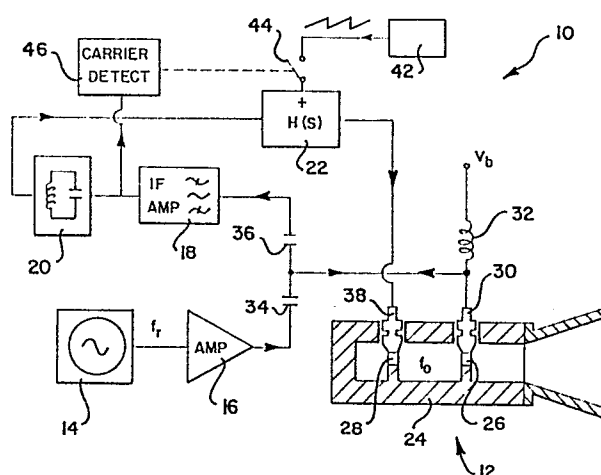
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54 **RF oscillator and method of generating RF energy.**

57 A frequency stable RF oscillator (10) comprises a variable frequency RF source in the form of a microwave cavity (24) having a Gunn diode (26) and a varactor (28) mounted therein, and produces an RF output frequency (f_o). The output of a frequency stable reference oscillator (14) having a frequency (f_r) is impressed upon the RF source. Through self-mixing action of the Gunn diode, an IF whose frequency is $f_{IF} = |nf_r - f_o|$ is generated, n being a high harmonic number. The IF is detected by an IF amplifier (18) which forms part of a frequency lock loop controlling the frequency of the RF source.





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EUROPEAN SEARCH REPORT

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DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl.4)
A	US-A-4 099 144 (OKAMOTO et al.) * Column 2, line 60 - column 6, line 45; figures 2,7 *	1-7,9-11	H 03 L 7/04
A	--- PROCEEDINGS FOURTH BIENNIAL CORNELL ELECTRICAL ENGINEERING CONFERENCE, Ithaca, New York, 14th-16th August 1973, pages 43-51; D.N. McQUIDDY et al.: "Airborne radar applications for solid state microwave diode sources" * Page 43, line 32 - page 44, line 37; figure 1 *	8	
A	--- NTC 1979 CONFERENCE RECORD, vol. 1, Washington, D.C., 27th-29th November 1979, pages 2.9.1-2.9.5, IEEE, New York, US; R.M. KNOWLES: "The use of gunplexers in today's telecommunication systems" * Figure 4 *	5,11	
The present search report has been drawn up for all claims			TECHNICAL FIELDS SEARCHED (Int. Cl.4)
Place of search THE HAGUE		Date of completion of the search 24-02-1987	Examiner DHONDT I.E.E.
CATEGORY OF CITED DOCUMENTS			
X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document	